

Application Serial No. 09/764,630
Response dated February 18, 2004
Reply to Office Action dated November 18, 2003

REMARKS

Claims 1-11 are pending. Claims 1-11 have been rejected.

Claim Rejections - 35 USC § 112

The Examiner has rejected claims 1-11 of the present application under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such manner as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. In particular, the Examiner states that the presence of knurled surfaces results in discontinuities in adjacent cross-sections, and thus the specification does not describe an element where no two adjacent cross-sections exhibit discontinuity. In view of claims 1 and 8 as presently amended, Applicant respectfully disagrees.

Applicant first notes that independent claims 1 and 8 have been amended to recite that "no two adjacent transverse cross-sections of said rearwardly-facing extension exhibit substantial discontinuity in area" Applicant asserts that a knurled surface does not represent a "substantial" discontinuity in area between adjacent transverse cross-sections. In support, Applicant directs the Examiner's attention to claims 1 and 2 as originally filed. Originally-filed claim 1 recited a "rearwardly-facing extension exhibiting no discontinuity in its transverse cross-sections" Originally-filed claim 2 depended directly from claim 1 and added the limitation that the rearwardly

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facing coupling element was "knurled." Thus, in its entirety, originally-filed claim 2 recited a knurled rearwardly facing coupling element exhibiting no discontinuity in transverse cross-sections. Thus, the "discontinuity" recited in the claims *must* be something other than and more substantial than a knurled surface. In order to clarify this, Applicant has presently amended independent claims 1 and 8 to recite that the extension exhibits no "substantial" discontinuity.

Further support for the proposition that the discontinuity recited in the claims is a substantial discontinuity, other than a knurled surface, can be found in the Background of the Invention section of the present application. There, one problem associated with prior art coupling is described as the presence of "backlash" (i.e., the absence of a perfect fit between respective components of a coupling mechanism, resulting in a lag time between movement of a drive ram and deployment of a syringe plunger to inject fluids). The Background gives the example of a "jaw and button" arrangement as exhibiting this backlash. This is the problem the present invention eliminates due to the configuration of the elements of its coupling mechanism. Thus, it can be seen from the application as originally filed that a "discontinuity" is a change in area that would result in the problems of backlash. This is more substantial than a simply knurled surface, and such would be readily recognized by one of skill in the relevant art. In view of the above, Applicant respectfully requests that the rejection of claims 1-11 under 35 U.S.C. § 112, first paragraph, be withdrawn.

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Drawings

The Examiner has objected to the drawings under 37 C.F.R. § 1.83(a) as not showing every feature of the invention specified in the claims. In particular, the Examiner states that the drawings do not show an element where no two adjacent transverse cross-sections exhibit discontinuity in area along the gripped portion. In view of the present amendments to claims 1 and 8, Applicants respectfully disagree with the objection to the drawings.

As discussed above with respect to the rejection of claims 1-11 under 35 U.S.C. § 112, independent claims 1 and 8 have been amended to recite that "no two adjacent transverse cross-sections of said rearwardly-facing extension exhibit substantial discontinuity in area" For the reasons previously discussed, Applicant asserts that a knurled surface does not represent a "substantial" discontinuity in area between adjacent transverse cross-sections. Thus, Applicant submits that the drawings do show every feature of the invention specified in the claims, as those claims have been presently amended. Applicant therefore respectfully requests a withdrawal of the objection to the drawings.

Claim Rejections - 35 USC § 102

The Examiner has rejected claims 1-6 and 8-11 of the present application under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,300,031, issued to Neer et al. The Examiner's rationale for rejecting claims 1-6 and 8-11 as anticipated by

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the Neer et al. '031 patent in the final rejection is as follows: The Examiner states that the Neer et al. '031 patent anticipates the claims in that Neer et al. "shows a syringe having a barrel, [a] plunger, [a] coupling element 96, [a] conical front, syringe mating sections comprising an annular flange fixed to the syringe body." (Office Action, November 18, 2003, p.3). The Examiner also states that in the Neer et al. '031 patent "[t]he portion of the extension 96 gripped by a coupling mechanism has an outer cylindrical surface and therefore shows no discontinuities in adjacent transverse cross-sections." (Id.). In view of the present amendments to independent claims 1 and 8, Applicant respectfully disagrees.

Applicants note that claims 1 and 8, as presently amended, recite a rearward facing extension "wherein no two adjacent transverse cross-sections of said rearwardly facing extension exhibit substantial discontinuity in area when compared one to another *along the portion of said extension adapted to be within an area enveloped by a coupling mechanism . . .*" (Emphasis added). Regarding this discontinuity in "an area enveloped by a coupling mechanism," in the claims as presently amended, Applicants note that the rearward facing element of the Neer et al. reference includes a T- or mushroom-shaped button located at the end of the plunger drive ram (See reference number 96 in Fig. 4). As can be seen, this button includes an extension protruding from the rearward face of the syringe plunger, topped by a cap. Further, Applicants submit that it is clear, from at least Figs. 11 and 12 of Neer et al., that the

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T-shaped button is enveloped by two jaws 114, that extend from a point near pivot pins 115 to a point near surfaces 120. Thus, the T-shaped coupling element that is enveloped by the jaws includes both the button 98 and the extension 96. Applicants further note that such a coupling element would exhibit substantial discontinuity in area in adjacent transverse cross-sections, in that a cross-section taken at the cap of the button would be of a much greater diameter than an adjacent cross-section taken along the extension protruding from the rearward face of the syringe plunger. Thus, Applicants submit that the Neer et al. reference fails to disclose each and every claimed element of the present application in claims 1 and 8, as presently amended. Applicants thus submit that claims 1 and 8 are not anticipated by the Neer et al. reference. Since claims 1 and 8 are not anticipated, Applicants further submit that dependent claims 2-6 and 9-11 are also not anticipated by the Neer et al. reference. Applicants therefore respectfully request a withdrawal of this rejection.

Claim Rejections - 35 USC § 103

The Examiner has rejected claim 7 under 35 U.S.C. § 103(a) as being unpatentable over the Neer et al. '031 patent in view of U.S. Patent No. 5,007,904 (the Densmore '904 patent).

In order to establish a prima facie case of obviousness, the Examiner must show that the cited references, as combined, teach or suggest each of the elements of the claims. Claim 7 depends from independent claim 1, and thus

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incorporates the limitations of those claims. At least for the reasons discussed above, the Neer et al. '031 patent does not teach or suggest each and every element of claim 1. Further, it is submitted that the Densmore '904 patent fails to teach the elements of claim 1 that are missing in the Neer et al. '031 patent. More specifically, Applicant submits that, like the Neer et al. '031 patent, the Densmore '904 patent does not teach or suggest a rearward facing extension "wherein no two adjacent transverse cross-sections of said rearwardly facing extension exhibit substantial discontinuity in area when compared one to another along the portion of said extension that falls within an area enveloped by a coupling mechanism . . . ," as presently recited in amended claim 1. Thus, regardless of whether one skilled in the art would be motivated to combine the teachings of the two references, it is submitted that any combination of the Neer et al. '031 patent and the Densmore '904 patent does not show each and every element of claim 7, as that claim is ultimately dependent on claim 1. Accordingly, withdrawal of the obviousness rejection of claim 7 is requested.

Conclusion:

For the foregoing reasons, it is submitted that all claims are patentable and a Notice of Allowance is respectfully requested.


It is believed that no fee is due. If, however, any additional fee or surcharges are deemed due, please charge same or credit any overpayment to Deposit Account No. 23-3000.

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The Examiner is invited to contact the undersigned attorney with any questions or remaining issues.

Respectfully submitted,

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